

**REMARKS**

Please charge any fee deficiency or credit any overpayment to Deposit Account

No. 01-2300.

Respectfully submitted,



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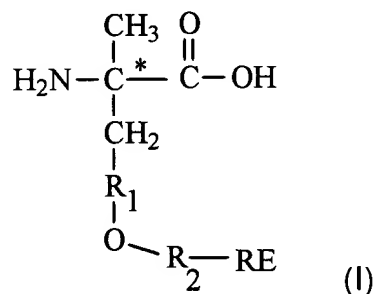
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2010-09-24 10:00:00

MARKED UP COPY OF SPECIFICATION

[0003] Generally speaking, PET uses Radio-compounds labeled with the positron-emitters such as  $^{18}\text{F}$ ,  $^{11}\text{C}$ ,  $^{13}\text{N}$  and  $^{15}\text{O}$ , SPECT uses radio compounds labeled with the single-photon-emitters [radionuclides that have fewer neutrons than protons, such as  $^{18}\text{F}$ ,  $^{11}\text{C}$ ,  $^{13}\text{N}$  and  $^{15}\text{O}$ , although  $^{75}\text{Br}$  and  $^{124}\text{I}$  can also be used. SPECT, on the other hand, generally uses radionuclides that have more neutrons than protons,] such as  $^{67}\text{Ga}$ ,  $^{77}\text{Br}$ ,  $^{123}\text{I}$ ,  $^{124}\text{I}$ ,  $^{125}\text{I}$ ,  $^{126}\text{I}$ ,  $^{131}\text{I}$  and  $^{201}\text{Tl}$ .

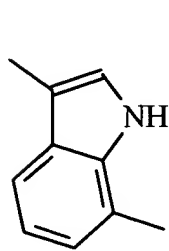
[0010] The present invention includes compounds of formula (I), or pharmaceutically acceptable salts thereof:



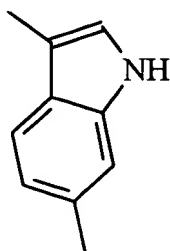
wherein

the C marked with an asterisk represents a chiral center and the compound is present in the L-form, the D-form or as a racemic mixture;

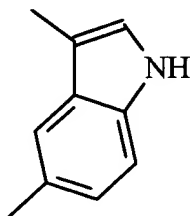
$\text{R}_1$  is selected from the group consisting of a single bond, phenyl, and a group of formula (a), (b), (c) or (d)



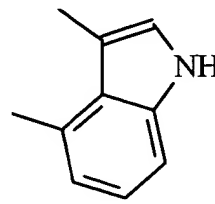
(a),



(b),



(c),

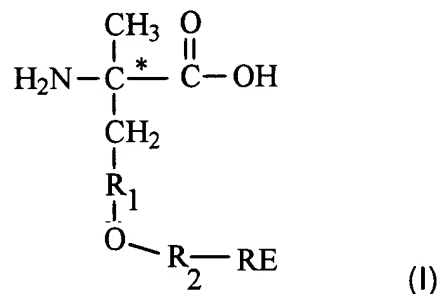


(d);

$\text{R}_2$  is  $\text{C}_1\text{-C}_7$  alkyl; and

RE is selected from the group consisting of  $^{11}\text{C}$ ,  $^{13}\text{N}$ ,  $^{15}\text{O}$ ,  $^{18}\text{F}$ ,  $^{67}\text{Ga}$ ,  $^{75}\text{Br}$ ,  $^{77}\text{Br}$ ,  $^{123}\text{I}$ ,  $^{124}\text{I}$ ,  $^{125}\text{I}$ ,  $^{126}\text{I}$ ,  $^{131}\text{I}$  and  $^{201}\text{Tl}$ , preferably [ $^{75}\text{Br}$ ,  $^{124}\text{I}$ ]  $^{123}\text{I}$ ,  $^{125}\text{I}$  [or] and  $^{18}\text{F}$ .

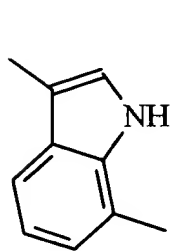
**[0015]** In this invention, compounds of formula I have been developed:



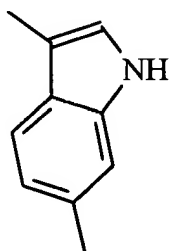
wherein

the C marked with an asterisk represents a chiral center and the compound is present in the L-form, the D-form or as a racemic mixture;

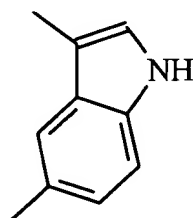
$\text{R}_1$  is selected from the group consisting of a single bond, phenyl, and a group of formula (a), (b), (c) or (d)



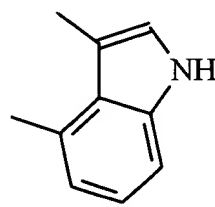
(a),



(b),



(c),



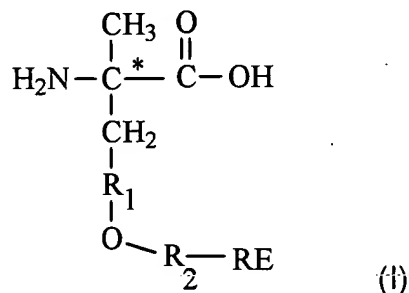
(d);

$\text{R}_2$  is  $\text{C}_1\text{-C}_7$  alkyl; and

RE is selected from the group consisting of  $^{11}\text{C}$ ,  $^{13}\text{N}$ ,  $^{15}\text{O}$ ,  $^{18}\text{F}$ ,  $^{67}\text{Ga}$ ,  $^{75}\text{Br}$ ,  $^{77}\text{Br}$ ,  $^{123}\text{I}$ ,  $^{124}\text{I}$ ,  $^{125}\text{I}$ ,  $^{126}\text{I}$ ,  $^{131}\text{I}$  and  $^{201}\text{Tl}$ , preferably [ $^{75}\text{Br}$ ,  $^{124}\text{I}$ ]  $^{123}\text{I}$ ,  $^{125}\text{I}$  [or] and  $^{18}\text{F}$ .

# MARKED UP COPY OF CLAIMS

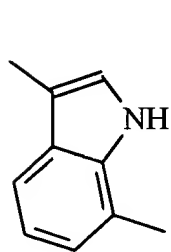
1. A compound of formula (I), or a pharmaceutically acceptable salt thereof:



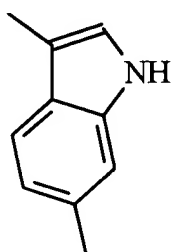
wherein

the C marked with an asterisk represents a chiral center and the compound is present in the L-form, the D-form or as a racemic mixture;

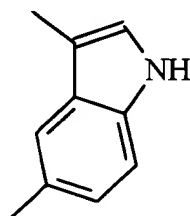
R<sub>1</sub> is selected from the group consisting of a single bond, phenyl, and a group of formula (a), (b), (c) or (d)



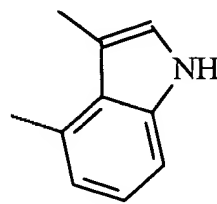
(a),



(b),



(c),

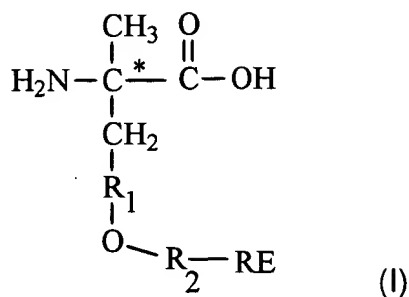


(d);

R<sub>2</sub> is C<sub>1</sub>-C<sub>7</sub> alkyl; and

RE is selected from the group consisting of [<sup>75</sup>Br, <sup>124</sup>I] <sup>123</sup>I, <sup>125</sup>I and <sup>18</sup>F.

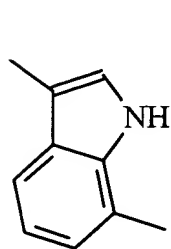
34. A method of synthesizing a compound of formula (I):



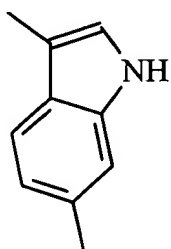
wherein

the C marked with an asterisk represents a chiral center and the compound is present in the L-form, the D-form or as a racemic mixture;

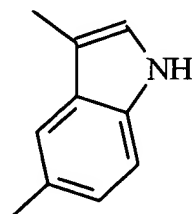
R<sub>1</sub> is selected from the group consisting of a single bond, phenyl, and a group of formula (a), (b), (c) or (d)



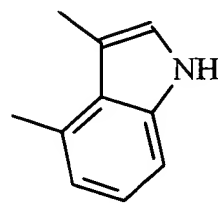
(a),



(b),



(c),

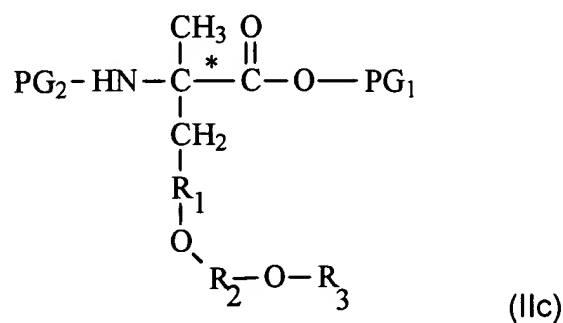


(d);

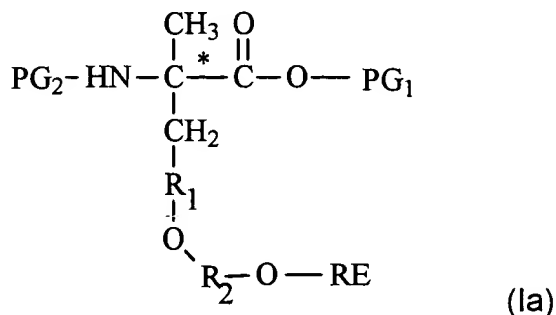
R<sub>2</sub> is C<sub>1</sub>-C<sub>7</sub> alkyl, and

RE is selected from the group consisting of [<sup>75</sup>Br, <sup>124</sup>I] <sup>123</sup>I, <sup>125</sup>I and <sup>18</sup>F, the process comprising the following steps:

(1) reacting a compound of formula (IIc):



wherein R<sub>1</sub> and R<sub>2</sub> are the same as above, R<sub>3</sub> is a leaving group, PG<sub>1</sub> is a carboxyl protecting group and PG<sub>2</sub> is an amino protecting group, with a salt of RE, wherein RE is the same as above, to produce a compound of formula (Ia):

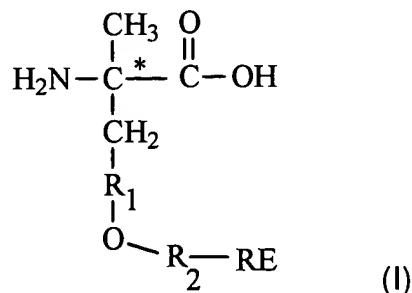


wherein R<sub>1</sub>, R<sub>2</sub>, RE, PG<sub>1</sub> and PG<sub>2</sub> are the same as above; and

(2) removing the protecting groups.

38. A method of imaging a tumor in a patient using positron emission tomography (PET) or single photon emission computed tomography (SPECT) imaging, the method comprising

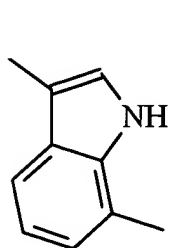
administering to the patient a tumor imaging effective amount of a compound of formula (I), or a pharmaceutically acceptable salt thereof:



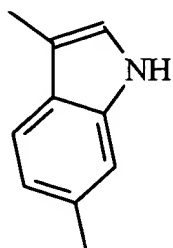
wherein

the C marked with an asterisk represents a chiral center and the compound is present in the L-form, the D-form or as a racemic mixture,

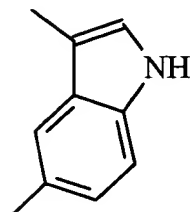
R<sub>1</sub> is selected from the group consisting of a single bond, phenyl, and a group of formula (a), (b), (c) or (d)



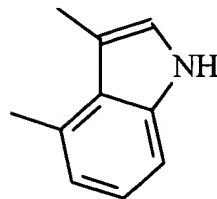
(a),



(b),



(c),



(d),

R<sub>2</sub> is C<sub>1</sub>-C<sub>7</sub> alkyl, and

RE is selected from the group consisting of [<sup>75</sup>Br, <sup>124</sup>I], <sup>123</sup>I, <sup>125</sup>I and <sup>18</sup>F; and imaging the tumor using PET or SPECT imaging.

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